



M.S. Collider Mechanical Group  
Procedure C-A-CMS-8.1.0.1  
Original Issue Date: 02/05/02  
Revision 00

## **15.8.1 Dipole Magnet Installation**

### **1. Purpose and Scope**

This procedure covers the installation of the arc dipole and other magnets of similar length. A separate procedure will cover the installation of the arc quads and other shorter magnets such as D6, and D9.

### **2. Responsibilities**

Persons installing dipole magnets are responsible for conducting this procedure. This procedure does not require the completion of any documentation.

### **3. Prerequisites**

3.1 All personnel involved in implementing this procedure shall have a valid Safety Awareness Certificate (SAC) and shall have been trained on this procedure and the equipment by the cognizant engineer, or the cognizant technical supervisor.

#### **3.2 Required Tools**

- A. Heavy duty strap (4 required) McMaster-Carr #5103A11, or equivalent.
- B. Heavy duty strap (2 required) McMaster-Carr #5103A14, or equivalent.
- C. Impact wrench
- D. Hex nut adapter
- E. Transporter Cart - Dwg. #RD01055032
- F. Spreader Bar - Dwg. #25-42303-4
- G. Spacer bar (4 required) - Dwg. #01055053
- H. Tape measure

### **4. Precautions**

None

### **5. Procedure**

#### **5.1 Shipping**

The following steps shall be performed at the Magnet Division shipping point:

- 5.1.1 Verify the magnet Traveler has been signed off by the cognizant Magnet Division representative.
- 5.1.2 Check the slot assignment and orientation. See Attachment 1 for reference. The slot name indicates the ring color (Y, or B), Outer or Inner, Sector number, and the magnet number.

- 5.1.3 Position the Transporter Carts, Assy. Dwg. #RD01055032, about 3.5 meters (- 11. 5 ft.) apart, with the drawbar ends facing outward. Make sure that the motors of the transporter will face the closest tunnel wall once inside the ring. Remove the draw bars if they are attached.

**NOTE**

Looking at the magnet from the lead end to the other end, for the outer ring magnets, the closest tunnel wall would be on the right hand side115. For the inner ring magnets, it would be on the left hand side.

- 5.1.4 Place the magnet on the Transporter Carts using a crane and spreader bar, Dwg. #25-42303-4.
- 5.1.5 Rigidly fasten the magnet to the carts using four spacer bars, Dwg. #RD01055053. Band each cart to the magnet using two (2) heavy-duty band straps, such as McMaster-Carr Part #5103A11, or equivalent, per cart. Lock the cam brakes on the four, dual-wheeled casters.
- 5.1.6 Lift the whole transporter and magnet assembly onto a flatbed truck. Chock the dual wheel casters with wooden wedges and secure the magnet and transporter assembly to the truck using two (2) heavy-duty band straps such as McMaster-Carr Part #5103A14, or equivalent.
- 5.1.7 Move the whole assembly to the designated portal of entry, per Attachment 1.

**NOTE**

If there is heavy rain or snow, shipping should be avoided. If it is absolutely necessary to ship during inclement weather, the magnet should be properly covered.

**5.2     Ring Installation**

**WARNING**

Failure to level the flatbed may cause personal injury and/or equipment damage when the restraints between the magnet and truck are removed.

- 5.2.1 Position the truck carrying the magnet at the loading/unloading platform. Verify that the flatbed is level.
- 5.2.2 Connect the pull bar of the leading cart to a specially modified electric pull cart (Geared-down, Taylor-Dunn C4-32). Remove the restraints between the magnet and truck. Release all caster brakes. Unlock the steering lock pins on the cart to be connected to the electric pull cart. Leave the steering on the double wheel casters of the trailing cart locked. Remove the chocks from the caster wheels.

**CAUTION**

To prevent damage to the magnet or transporter, drive slowly along the way, checking that the motors on the transporter carts are clearing the nearest tunnel wall.

- 5.2.3 Pull the magnet and transporter system off the flatbed onto the platform. Continue moving the system until it reaches the ring.

**NOTE**

At 4 o'clock and 8 o'clock entry points, continue moving the magnet to the designated slot location. At 12 O' clock, however, due to the shape of the entry port, it is necessary to switch the pull cart from one end to the other end before proceeding to the designated slot location.

- 5.2.4 At the slot location, verify that the adjusting slider and all other related hardware are in their proper position on top of each magnet stand, as shown in Attachment 2. Center the sliders on the magnet stands.
- 5.2.5 Adjust the longitudinal magnet position so the mounting holes on the magnet legs are aligned within half an inch of the vertical adjusting rods on the magnet stand.
- 5.2.6 Disconnect the pullbar and steering linkage from both carts. Manually rotate each caster 90 degrees.
- 5.2.7 Connect the electric motors of the Transporter Carts to the control box. Connect the control box to a 220 V AC outlet. Rotate the switch on the control box to "UP." Monitor upward motion until the upper limit switch is reached. Rotate the switch on the control box to "OFF."
- 5.2.8 Verify adequate clearance between the magnet leg and the vertical adjusting rods. Slowly move the system into position. Adjust the sliders so that the vertical threaded rods will be *exactly* aligned to the mounting holes. Rotate the casters 90 degrees and adjust the longitudinal position, as required.
- 5.2.9 Using an impact wrench and hex nut adapter (Attachment 2), drive the vertical adjusting rod up through the mounting hole of the magnet leg. See Attachment 3 for nominal dimensions.

**CAUTION**

Failure to remove the four spacer bars (Dwg. #RD01055053) before lowering the magnet will result in equipment damage.

- 5.2.10 Remove the four spacer bars (Dwg. #RD01055053) between the transporters and magnet.

- 5.2.11 Rotate the switch on the control box to "DWN." Lower the magnet until its weight is *about* to be transferred to the stand. Stop magnet motion by rotating the switch on the control box to "OFF." Verify that the spherical washers are in place in the counterbored surface on the underside of the magnet leg. Continue lowering the transporter until it reaches the lower limit switch. Turn the switch on the control box to "OFF."
- 5.2.12 Center the sliders on the magnet stands using the X and Z adjustment bolts. See Attachment 3 for reference. Verify that the protective end covers of the magnet are intact; re-wrap them if necessary.
- 5.2.13 Remove the hex adapter and install the lower retaining plate and nut. Do not use a wrench to tighten the nut; leave it finger tight (Attachment 3).
- 5.2.14 Rotate the casters, as required. Move the carts to the aisle. Turn the casters back to 90 degrees. Attach the steering linkages and pull bars. Bolt the carts together. Lock the steering for the trailing cart.
- 5.2.15 Tow the transporter carts, the four (4) spacer bars, Dwg. #01055053, and the four (4) heavy duty band straps back to the initial shipping point. Store the come-alongs hex adapter, impact wrench, and the control box in a safe place.

**NOTE**

For the first few magnets, there may be only temporary end bellows supports. These supports also should be removed and taken to the initial shipping point for reuse. It is expected, however, that this step will become obsolete once the final bellows support design is implemented.

**6.    Documentation**

None

**7.    References**

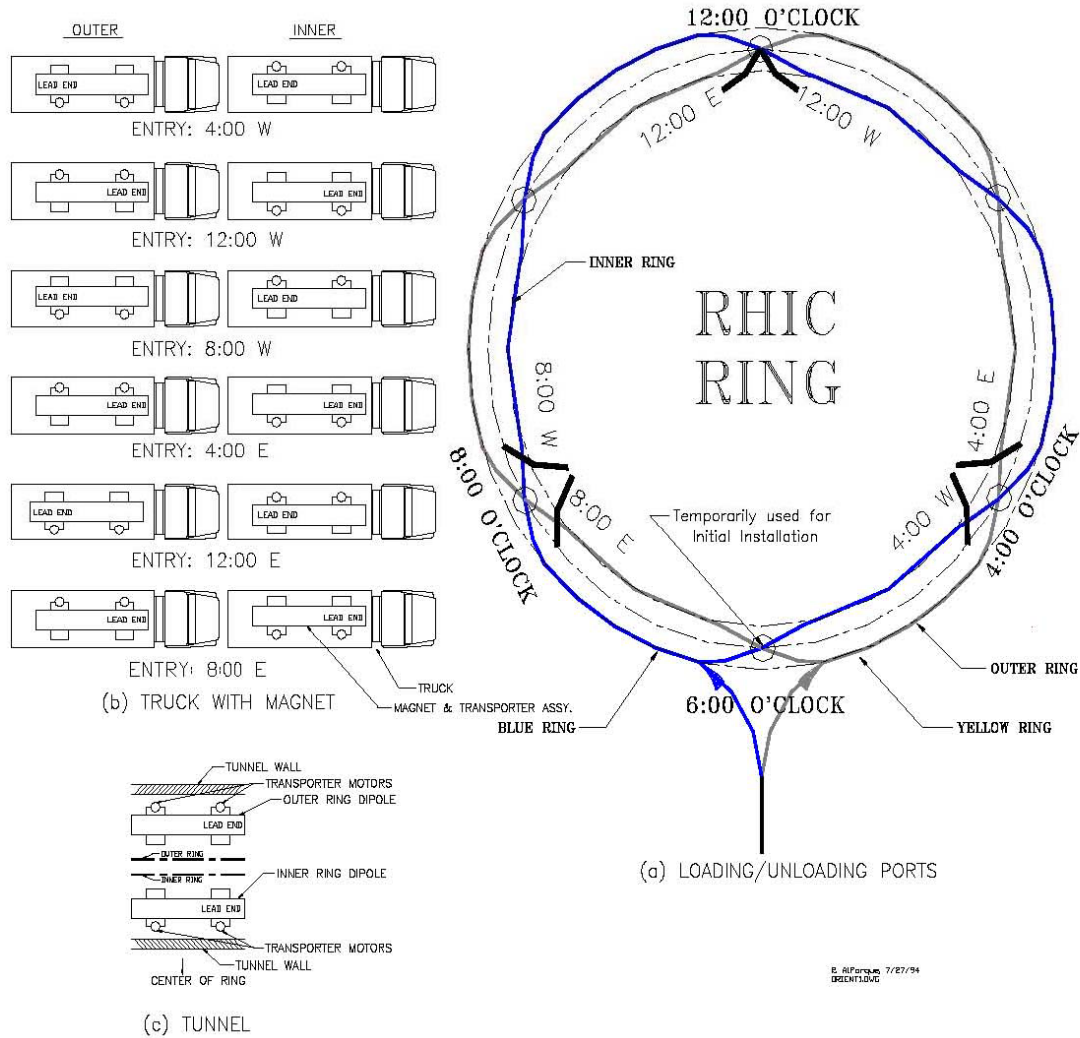
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**8.    Attachments**

1. Shipping and Installation Guide/Dipole Magnet Orientation Table
2. Initial Set-Up
3. Final Set-Up

## Attachment 1

### Shipping and Installation Guide



**Dipole Magnet Orientation Table**

Sector	Slot Name	Entry	Lead End	Transp. Motor Faces	Slot Name	Entry	Lead End	Transp. Motor Faces
5	YO05D05	4:00W	BACK	RIGHT	BI05D05	4:00W	BACK	LEFT
5	YO05D06	4:00W	BACK	RIGHT	BI05D06	4:00W	BACK	LEFT
5	YO05D07	4:00W	BACK	RIGHT	BI05D07	4:00W	BACK	LEFT
5	YO05D08	4:00W	BACK	RIGHT	BI05D08	4:00W	BACK	LEFT
5	YO05D09	4:00W	BACK	RIGHT	BI05D09	4:00W	BACK	LEFT
5	YO05D10	4:00W	BACK	RIGHT	BI05D10	4:00W	BACK	LEFT
5	YO05D11	4:00W	BACK	RIGHT	BI05D11	4:00W	BACK	LEFT
5	YO05D12	4:00W	BACK	RIGHT	BI05D12	4:00W	BACK	LEFT
5	YO05D13	4:00W	BACK	RIGHT	BI05D13	4:00W	BACK	LEFT
5	YO05D14	4:00W	BACK	RIGHT	BI05D14	4:00W	BACK	LEFT
5	YO05D15	4:00W	BACK	RIGHT	BI05D15	4:00W	BACK	LEFT
5	YO05D16	4:00W	BACK	RIGHT	BI05D16	4:00W	BACK	LEFT
5	YO05D17	4:00W	BACK	RIGHT	BI05D17	4:00W	BACK	LEFT
5	YO05D18	4:00W	BACK	RIGHT	BI05D18	4:00W	BACK	LEFT
5	YO05D19	4:00W	BACK	RIGHT	BI05D19	4:00W	BACK	LEFT
5	YO05D20	4:00W	BACK	RIGHT	BI05D20	4:00W	BACK	LEFT
4	YO04D20	4:00W	BACK	RIGHT	BI04D20	4:00W	BACK	LEFT
4	YO04D19	4:00W	BACK	RIGHT	BI04D19	4:00W	BACK	LEFT
4	YO04D18	4:00W	BACK	RIGHT	BI04D18	4:00W	BACK	LEFT
4	YO04D17	4:00W	BACK	RIGHT	BI04D17	4:00W	BACK	LEFT
4	YO04D16	4:00W	BACK	RIGHT	BI04D16	4:00W	BACK	LEFT
4	YO04D15	4:00W	BACK	RIGHT	BI04D15	4:00W	BACK	LEFT
4	YO04D14	4:00W	BACK	RIGHT	BI04D14	4:00W	BACK	LEFT
4	YO04D13	4:00W	BACK	RIGHT	BI04D13	4:00W	BACK	LEFT
4	YO04D12	4:00W	BACK	RIGHT	BI04D12	4:00W	BACK	LEFT
4	YO04D11	4:00W	BACK	RIGHT	BI04D11	4:00W	BACK	LEFT
4	YO04D10	4:00W	BACK	RIGHT	BI04D10	4:00W	BACK	LEFT
4	YO04D09	4:00W	BACK	RIGHT	BI04D09	4:00W	BACK	LEFT
4	YO04D08	4:00W	BACK	RIGHT	BI04D08	4:00W	BACK	LEFT
4	YO04D07	4:00W	BACK	RIGHT	BI04D07	4:00W	BACK	LEFT
4	YO04D06	4:00W	BACK	RIGHT	BI04D06	4:00W	BACK	LEFT
4	YO04D05	4:00W	BACK	RIGHT	BI04D05	4:00W	BACK	LEFT
2	BO02D05	4:00E	FRONT	LEFT	YI02D05	4:00E	FRONT	RIGHT
2	BO02D06	4:00E	FRONT	LEFT	YI02D06	4:00E	FRONT	RIGHT
2	BO02D07	4:00E	FRONT	LEFT	YI02D07	4:00E	FRONT	RIGHT
2	BO02D08	4:00E	FRONT	LEFT	YI02D08	4:00E	FRONT	RIGHT
2	BO02D09	4:00E	FRONT	LEFT	YI02D09	4:00E	FRONT	RIGHT

Y - Yellow Ring

B - Blue Ring

O - Outer Ring

I - Inner Ring

FRONT - Front of the truck; magnet *lead end* towards truck cab.BACK - Rear of the truck, magnet *lead end* away from truck cab.

Sector	Slot Name	Entry	Lead End	Transp. Motor Faces	Slot Name	Entry	Lead End	Transp. Motor Faces
2	BO02D10	4:00E	FRONT	LEFT	YI02D10	4:00E	FRONT	RIGHT
2	BO02D11	4:00E	FRONT	LEFT	YI02D11	4:00E	FRONT	RIGHT
2	BO02D12	4:00E	FRONT	LEFT	YI02D12	4:00E	FRONT	RIGHT
2	BO02D13	4:00E	FRONT	LEFT	YI02D13	4:00E	FRONT	RIGHT
2	BO02D14	4:00E	FRONT	LEFT	YI02D14	4:00E	FRONT	RIGHT
2	BO02D15	4:00E	FRONT	LEFT	YI02D15	4:00E	FRONT	RIGHT
2	BO02D16	4:00E	FRONT	LEFT	YI02D16	4:00E	FRONT	RIGHT
2	BO02D17	4:00E	FRONT	LEFT	YI02D17	4:00E	FRONT	RIGHT
2	BO02D18	4:00E	FRONT	LEFT	YI02D18	4:00E	FRONT	RIGHT
2	BO02D19	4:00E	FRONT	LEFT	YI02D19	4:00E	FRONT	RIGHT
2	BO02D20	4:00E	FRONT	LEFT	YI02D20	4:00E	FRONT	RIGHT
3	BO03D20	4:00E	FRONT	LEFT	YI03D20	4:00E	FRONT	RIGHT
3	BO03D19	4:00E	FRONT	LEFT	YI03D19	4:00E	FRONT	RIGHT
3	BO03D18	4:00E	FRONT	LEFT	YI03D18	4:00E	FRONT	RIGHT
3	BO03D17	4:00E	FRONT	LEFT	YI03D17	4:00E	FRONT	RIGHT
3	BO03D16	4:00E	FRONT	LEFT	YI03D16	4:00E	FRONT	RIGHT
3	BO03D15	4:00E	FRONT	LEFT	YI03D15	4:00E	FRONT	RIGHT
3	BO03D14	4:00E	FRONT	LEFT	YI03D14	4:00E	FRONT	RIGHT
3	BO03D13	4:00E	FRONT	LEFT	YI03D13	4:00E	FRONT	RIGHT
3	BO03D12	4:00E	FRONT	LEFT	YI03D12	4:00E	FRONT	RIGHT
3	BO03D11	4:00E	FRONT	LEFT	YI03D11	4:00E	FRONT	RIGHT
3	BO03D10	4:00E	FRONT	LEFT	YI03D10	4:00E	FRONT	RIGHT
3	BO03D09	4:00E	FRONT	LEFT	YI03D09	4:00E	FRONT	RIGHT
3	BO03D08	4:00E	FRONT	LEFT	YI03D08	4:00E	FRONT	RIGHT
3	BO03D07	4:00E	FRONT	LEFT	YI03D07	4:00E	FRONT	RIGHT
3	BO03D06	4:00E	FRONT	LEFT	YI03D06	4:00E	FRONT	RIGHT
3	BO03D05	4:00E	FRONT	LEFT	YI03D05	4:00E	FRONT	RIGHT
12	YO12D05	12:00W	FRONT	LEFT	BI12D05	12:00W	FRONT	RIGHT
12	YO12D06	12:00W	FRONT	LEFT	BI12D06	12:00W	FRONT	RIGHT
12	YO12D07	12:00W	FRONT	LEFT	BI12D07	12:00W	FRONT	RIGHT
12	YO12D08	12:00W	FRONT	LEFT	BI12D08	12:00W	FRONT	RIGHT
12	YO12D09	12:00W	FRONT	LEFT	BI12D09	12:00W	FRONT	RIGHT
12	YO12D10	12:00W	FRONT	LEFT	BI12D10	12:00W	FRONT	RIGHT
12	YO12D11	12:00W	FRONT	LEFT	BI12D11	12:00W	FRONT	RIGHT
12	YO12D12	12:00W	FRONT	LEFT	BI12D12	12:00W	FRONT	RIGHT
12	YO12D13	12:00W	FRONT	LEFT	BI12D13	12:00W	FRONT	RIGHT
12	YO12D14	12:00W	FRONT	LEFT	BI12D14	12:00W	FRONT	RIGHT
12	YO12D15	12:00W	FRONT	LEFT	BI12D15	12:00W	FRONT	RIGHT
12	YO12D16	12:00W	FRONT	LEFT	BI12D16	12:00W	FRONT	RIGHT
12	YO12D17	12:00W	FRONT	LEFT	BI12D17	12:00W	FRONT	RIGHT
12	YO12D18	12:00W	FRONT	LEFT	BI12D18	12:00W	FRONT	RIGHT
12	YO12D19	12:00W	FRONT	LEFT	BI12D19	12:00W	FRONT	RIGHT
12	YO12D20	12:00W	FRONT	LEFT	BI12D20	12:00W	FRONT	RIGHT

Y - Yellow Ring

B - Blue Ring

O - Outer Ring

I - Inner Ring

FRONT - Front of the truck; magnet *lead end* towards truck cab.BACK - Rear of the truck, magnet *lead end* away from truck cab.

Sector	Slot Name	Entry	Lead End	Transp. Motor Faces	Slot Name	Entry	Lead End	Transp. Motor Faces
1	YO01D20	12:00W	FRONT	LEFT	BI01D20	12:00W	FRONT	RIGHT
1	YO01D19	12:00W	FRONT	LEFT	BI01D19	12:00W	FRONT	RIGHT
1	YO01D18	12:00W	FRONT	LEFT	BI01D18	12:00W	FRONT	RIGHT
1	YO01D17	12:00W	FRONT	LEFT	BI01D17	12:00W	FRONT	RIGHT
1	YO01D16	12:00W	FRONT	LEFT	BI01D16	12:00W	FRONT	RIGHT
1	YO01D15	12:00W	FRONT	LEFT	BI01D15	12:00W	FRONT	RIGHT
1	YO01D14	12:00W	FRONT	LEFT	BI01D14	12:00W	FRONT	RIGHT
1	YO01D13	12:00W	FRONT	LEFT	BI01D13	12:00W	FRONT	RIGHT
1	YO01D12	12:00W	FRONT	LEFT	BI01D12	12:00W	FRONT	RIGHT
1	YO01D11	12:00W	FRONT	LEFT	BI01D11	12:00W	FRONT	RIGHT
1	YO01D10	12:00W	FRONT	LEFT	BI01D10	12:00W	FRONT	RIGHT
1	YO01D09	12:00W	FRONT	LEFT	BI01D09	12:00W	FRONT	RIGHT
1	YO01D08	12:00W	FRONT	LEFT	BI01D08	12:00W	FRONT	RIGHT
1	YO01D07	12:00W	FRONT	LEFT	BI01D07	12:00W	FRONT	RIGHT
1	YO01D06	12:00W	FRONT	LEFT	BI01D06	12:00W	FRONT	RIGHT
1	YO01D05	12:00W	FRONT	LEFT	BI01D05	12:00W	FRONT	RIGHT
11	BO11D05	12:00E	BACK	RIGHT	YI11D05	12:00E	BACK	LEFT
11	BO11D06	12:00E	BACK	RIGHT	YI11D06	12:00E	BACK	LEFT
11	BO11D07	12:00E	BACK	RIGHT	YI11D07	12:00E	BACK	LEFT
11	BO11D08	12:00E	BACK	RIGHT	YI11D08	12:00E	BACK	LEFT
11	BO11D09	12:00E	BACK	RIGHT	YI11D09	12:00E	BACK	LEFT
11	BO11D10	12:00E	BACK	RIGHT	YI11D10	12:00E	BACK	LEFT
11	BO11D11	12:00E	BACK	RIGHT	YI11D11	12:00E	BACK	LEFT
11	BO11D12	12:00E	BACK	RIGHT	YI11D12	12:00E	BACK	LEFT
11	BO11D13	12:00E	BACK	RIGHT	YI11D13	12:00E	BACK	LEFT
11	BO11D14	12:00E	BACK	RIGHT	YI11D14	12:00E	BACK	LEFT
11	BO11D15	12:00E	BACK	RIGHT	YI11D15	12:00E	BACK	LEFT
11	BO11D16	12:00E	BACK	RIGHT	YI11D16	12:00E	BACK	LEFT
11	BO11D17	12:00E	BACK	RIGHT	YI11D17	12:00E	BACK	LEFT
11	BO11D18	12:00E	BACK	RIGHT	YI11D18	12:00E	BACK	LEFT
11	BO11D19	12:00E	BACK	RIGHT	YI11D19	12:00E	BACK	LEFT
11	BO11D20	12:00E	BACK	RIGHT	YI11D20	12:00E	BACK	LEFT
10	BO10D20	12:00E	BACK	RIGHT	YI10D20	12:00E	BACK	LEFT
10	BO10D19	12:00E	BACK	RIGHT	YI10D19	12:00E	BACK	LEFT
10	BO10D18	12:00E	BACK	RIGHT	YI10D18	12:00E	BACK	LEFT
10	BO10D17	12:00E	BACK	RIGHT	YI10D17	12:00E	BACK	LEFT
10	BO10D16	12:00E	BACK	RIGHT	YI10D16	12:00E	BACK	LEFT
10	BO10DIS	12:00E	BACK	RIGHT	YI10D15	12:00E	BACK	LEFT
10	BO10D14	12:00E	BACK	RIGHT	YI10D14	12:00E	BACK	LEFT
10	BO10D13	12:00E	BACK	RIGHT	YI10D13	12:00E	BACK	LEFT
10	BO10D12	12:00E	BACK	RIGHT	YI10D12	12:00E	BACK	LEFT
10	BO10D11	12:00E	BACK	RIGHT	YI10D11	12:00E	BACK	LEFT
10	BO10D10	12:00E	BACK	RIGHT	YI10D10	12:00E	BACK	LEFT

Y - Yellow Ring

B - Blue Ring

O - Outer Ring

I - Inner Ring

FRONT - Front of the truck; magnet *lead end* towards truck cab.BACK - Rear of the truck, magnet *lead end* away from truck cab.

## (Attachment 1 cont' d)

Sector	Slot Name	Entry	Lead End	Transp. Motor Faces	Slot Name	Entry	Lead End	Transp. Motor Faces
10	BO10D09	12:00E	BACK	RIGHT	Y110D09	12:00E	BACK	LEFT
10	BO10D08	12:00E	BACK	RIGHT	Y110D08	12:00E	BACK	LEFT
10	BO10D07	12:00E	BACK	RIGHT	Y110D07	12:00E	BACK	LEFT
10	BO10D06	12:00E	BACK	RIGHT	Y110D06	12:00E	BACK	LEFT
10	BO10D05	12:00E	BACK	RIGHT	Y110D05	12:00E	BACK	LEFT
9	YO09D05	8:00W	BACK	RIGHT	BI09D05	8:00W	BACK	LEFT
9	YO09D06	8:00W	BACK	RIGHT	BI09D06	8:00W	BACK	LEFT
9	YO09D07	8:00W	BACK	RIGHT	BI09D07	8:00W	BACK	LEFT
9	YO09D08	8:00W	BACK	RIGHT	BI09D08	8:00W	BACK	LEFT
9	YO09D09	8:00W	BACK	RIGHT	BI09D09	8:00W	BACK	LEFT
9	YO09D10	8:00W	BACK	RIGHT	BI09D10	8:00W	BACK	LEFT
9	YO09D11	8:00W	BACK	RIGHT	BI09D11	8:00W	BACK	LEFT
9	YO09D12	8:00W	BACK	RIGHT	BI09D12	8:00W	BACK	LEFT
9	YO09D13	8:00W	BACK	RIGHT	BI09D13	8:00W	BACK	LEFT
9	YO09D14	8:00W	BACK	RIGHT	BI09D14	8:00W	BACK	LEFT
9	YO09D15	8:00W	BACK	RIGHT	BI09D15	8:00W	BACK	LEFT
9	YO09D16	8:00W	BACK	RIGHT	BI09D16	8:00W	BACK	LEFT
9	YO09D17	8:00W	BACK	RIGHT	BI09D17	8:00W	BACK	LEFT
9	YO09D18	8:00W	BACK	RIGHT	BI09D18	8:00W	BACK	LEFT
9	YO09D19	8:00W	BACK	RIGHT	BI09D19	8:00W	BACK	LEFT
9	YO09D20	8:00W	BACK	RIGHT	BI09D20	8:00W	BACK	LEFT
8	YO08D20	8:00W	BACK	RIGHT	BI08D20	8:00W	BACK	LEFT
8	YO08D19	8:00W	BACK	RIGHT	BI08D19	8:00W	BACK	LEFT
8	YO08D18	8:00W	BACK	RIGHT	BI08D18	8:00W	BACK	LEFT
8	YO08D17	8:00W	BACK	RIGHT	BI08D17	8:00W	BACK	LEFT
8	YO08D16	8:00W	BACK	RIGHT	BI08D16	8:00W	BACK	LEFT
8	YO08D15	8:00W	BACK	RIGHT	BI08D15	8:00W	BACK	LEFT
8	YO08D14	8:00W	BACK	RIGHT	BI08D14	8:00W	BACK	LEFT
8	YO08D13	8:00W	BACK	RIGHT	BI08D13	8:00W	BACK	LEFT
8	YO08D12	8:00W	BACK	RIGHT	BI08D12	8:00W	BACK	LEFT
8	YO08D11	8:00W	BACK	RIGHT	BI08D11	8:00W	BACK	LEFT
8	YO08D10	8:00W	BACK	RIGHT	BI08D10	8:00W	BACK	LEFT
8	YO08D09	8:00W	BACK	RIGHT	BI08D09	8:00W	BACK	LEFT
8	YO08D08	8:00W	BACK	RIGHT	BI08D08	8:00W	BACK	LEFT
8	YO08D07	8:00W	BACK	RIGHT	BI08D07	8:00W	BACK	LEFT
8	YO08D06	8:00W	BACK	RIGHT	BI08D06	8:00W	BACK	LEFT
8	YO08D05	8:00W	BACK	RIGHT	BI08D05	8:00W	BACK	LEFT

Nomenclature:

Y - Yellow Ring

B - Blue Ring

O - Outer Ring

I - Inner Ring

FRONT - Front of the truck; magnet *lead end* towards truck cab.BACK - Rear of the truck, magnet *lead end* away from truck cab.

Sector	Slot Name	Entry	Lead End	Transp. Motor Faces	Slot Name	Entry	Lead End	Transp. Motor Faces
7	BO07D05	8:00E	FRONT	LEFT	YI07D05	8:00E	FRONT	RIGHT
7	BO07D06	8:00E	FRONT	LEFT	YI07D06	8:00E	FRONT	RIGHT
7	BO07D07	8:00E	FRONT	LEFT	YI07D07	8:00E	FRONT	RIGHT
7	BO07D08	8:00E	FRONT	LEFT	YI07D08	8:00E	FRONT	RIGHT
7	BO07D09	8:00E	FRONT	LEFT	YI07D09	8:00E	FRONT	RIGHT
7	BO07D10	8:00E	FRONT	LEFT	YI07D10	8:00E	FRONT	RIGHT
7	BO07D11	8:00E	FRONT	LEFT	YI07D11	8:00E	FRONT	RIGHT
7	BO07D12	8:00E	FRONT	LEFT	YI07D12	8:00E	FRONT	RIGHT
7	BO07D13	8:00E	FRONT	LEFT	YI07D13	8:00E	FRONT	RIGHT
7	BO07D14	8:00E	FRONT	LEFT	YI07D14	8:00E	FRONT	RIGHT
7	BO07D15	8:00E	FRONT	LEFT	YI07D15	8:00E	FRONT	RIGHT
7	BO07D16	8:00E	FRONT	LEFT	YI07D16	8:00E	FRONT	RIGHT
7	BO07D17	8:00E	FRONT	LEFT	YI07D17	8:00E	FRONT	RIGHT
7	BO07D18	8:00E	FRONT	LEFT	YI07D18	8:00E	FRONT	RIGHT
7	BO07D19	8:00E	FRONT	LEFT	YI07D19	8:00E	FRONT	RIGHT
7	BO07D20	8:00E	FRONT	LEFT	YI07D20	8:00E	FRONT	RIGHT
6	BO06D20	8:00E	FRONT	LEFT	YI06D20	8:00E	FRONT	RIGHT
6	BO06D19	8:00E	FRONT	LEFT	YI06D19	8:00E	FRONT	RIGHT
6	BO06D18	8:00E	FRONT	LEFT	YI06D18	8:00E	FRONT	RIGHT
6	BO06D17	8:00E	FRONT	LEFT	YI06D17	8:00E	FRONT	RIGHT
6	BO06D16	8:00E	FRONT	LEFT	YI06D16	8:00E	FRONT	RIGHT
6	BO06D15	8:00E	FRONT	LEFT	YI06D15	8:00E	FRONT	RIGHT
6	BO06D14	8:00E	FRONT	LEFT	YI06D14	8:00E	FRONT	RIGHT
6	BO06D13	8:00E	FRONT	LEFT	YI06D13	8:00E	FRONT	RIGHT
6	BO06D12	8:00E	FRONT	LEFT	YI06D12	8:00E	FRONT	RIGHT
6	BO06D11	8:00E	FRONT	LEFT	YI06D11	8:00E	FRONT	RIGHT
6	BO06D10	8:00E	FRONT	LEFT	YI06D10	8:00E	FRONT	RIGHT
6	BO06D09	8:00E	FRONT	LEFT	YI06D09	8:00E	FRONT	RIGHT
6	BO06D08	8:00E	FRONT	LEFT	YI06D08	8:00E	FRONT	RIGHT
6	BO06D07	8:00E	FRONT	LEFT	YI06D07	8:00E	FRONT	RIGHT
6	BO06D06	8:00E	FRONT	LEFT	YI06D06	8:00E	FRONT	RIGHT
6	BO06D05	8:00E	FRONT	LEFT	YI06D05	8:00E	FRONT	RIGHT

Nomenclature:

Y - Yellow Ring

B - Blue Ring

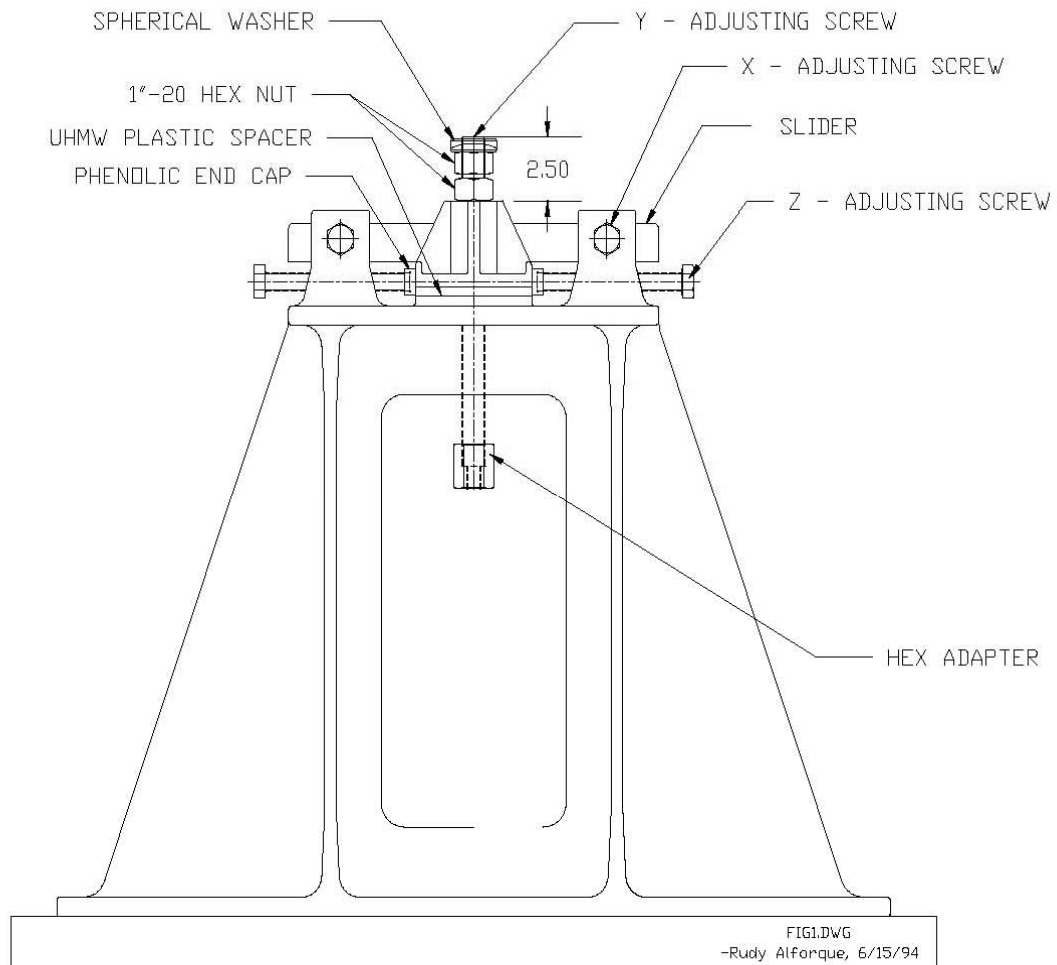
O - Outer Ring

I - Inner Ring

FRONT - Front of the truck; magnet *lead end* towards truck cab.BACK - Rear of the truck, magnet *lead end* away from truck cab.

## Attachment 2

### Initial Set-Up



### Attachment 3

### Final Set-Up

